

## CASE REPORT

# Star in the heart

K M Krishnamoorthy, J A Tharakan, S R Krishnamanohar

Heart 2004;90:e23 (<http://www.heartjnl.com/cgi/content/full/90/5/e23>). doi: 10.1136/hrt.2003.012930

In a 50 year old woman, transthoracic echocardiography showed a left atrial mass. Transoesophageal echocardiography delineated its attachment. Additionally, cystic spaces were seen arranged concentrically in the shape of a star in the centre of the tumour. Surgical excision followed. Histopathological examination confirmed myxoma with areas of haemorrhage and necrosis. This case highlights the acoustic property of myxomas in a rare and beautiful manner and emphasises the superior transoesophageal imaging of myxomas.

An unusual presentation of the acoustic property of myxomas is brought out in the following case report. This is a rarely described phenomenon among myxomas.

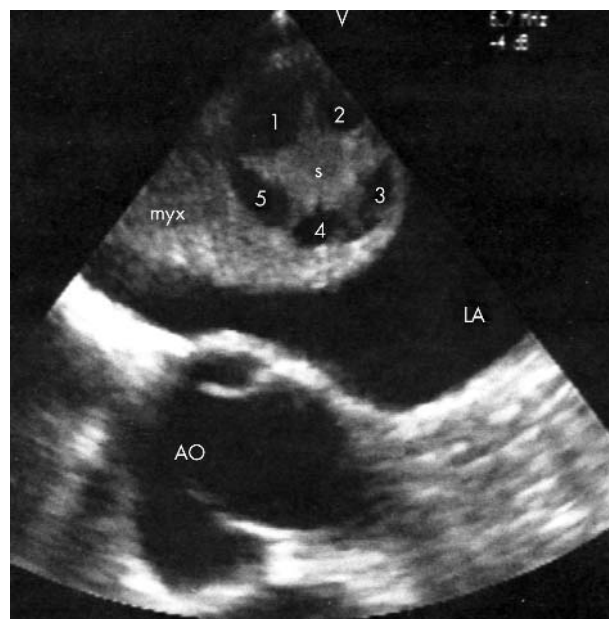
## CASE REPORT

A 50 year old woman had progressive exertional dyspnoea of four months' duration. She was in New York Heart Association functional class III. The sedimentation rate was high. Transthoracic echocardiography showed a myxoma in the left atrium. It had an ovoid shape and ping-pong movement with each cardiac cycle. Transoesophageal echocardiography showed the attachment of the tumour to the atrial septum and cystic spaces in the tumour. These cystic spaces were arranged in a highly uniform and concentric fashion. There were five such cystic spaces in the tumour. This produced a beautiful appearance of a star in the centre surrounded by cystic spaces (fig 1). Through a right atriotomy, the fossa ovalis region of the interatrial septum was excised along with the tumour. The defect was closed with a pericardial patch. The pedunculated tumour measured 5 × 4 cm and was attached to the lower part of the septum. On appearance, it was a usual myxoma. Histopathological examination confirmed the diagnosis of myxoma with areas of haemorrhage and necrosis.

## DISCUSSION

Myxomas are rounded echogenic masses with well defined borders. They frequently have areas of haemorrhage and necrosis.<sup>1</sup> Echo-free spaces are seen in these areas.<sup>2</sup> In our patient these echo-free spaces formed a unique star shape that has not been previously reported. Myxomas have multiple internal reflective interfaces that give them a fine speckled appearance, making it as reflective as its margins.<sup>3</sup> Visualisation of echo-free space helps to differentiate myxomas from vegetation or thrombus.<sup>3,4</sup> The appearance of echo-free spaces may vary with the position of the transducer, since haemorrhages are not symmetrically located.<sup>3</sup> If a tumour is extremely vascular, its acoustic property is similar to that of the surrounding blood, making it less reflective.

Echo-free spaces in myxomas have been described very rarely,<sup>3</sup> that too by transoesophageal technique.<sup>4</sup> The



**Figure 1** Transoesophageal echocardiography showing echo-free spaces (numbers 1 to 5) arranged uniformly around a star in the centre (s). AO, aorta; LA, left atrium; myx, myxoma.

advantages of transoesophageal echocardiography over transthoracic technique are improved resolution of the tumour and its attachments, and the ability to detect masses not seen by transthoracic method and to identify right atrial tumours.<sup>5</sup> The echo-free spaces in myxomas are more commonly seen on transoesophageal imaging because of the better resolution, different cross sectional planes that may be obtained, and the vicinity of oesophagus to the left atrium.<sup>4</sup>

This case is reported, firstly, to describe the unique acoustic property of myxomas in a rare but beautiful manner and, secondly, to emphasise the superior imaging of myxomas by transoesophageal echocardiography.

## Authors' affiliations

K M Krishnamoorthy, J A Tharakan, Department of Cardiology, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, India

S R Krishnamanohar, Department of Cardiac Surgery, Sree Chitra Tirunal Institute for Medical Sciences and Technology

Correspondence to: Dr K M Krishnamoorthy, SCTIMST, Trivandrum 695 011, India; [sakm@sctimst.ker.nic.in](mailto:sakm@sctimst.ker.nic.in)

Accepted 14 April 2003

## REFERENCES

- 1 Heath D. Pathology of cardiac tumors. *Am J Cardiol* 1968;21:315-27.

- 2 **Fyke FE III**, Seward JB, Edwards WD, *et al.* Primary cardiac tumors: experience with 30 consecutive patients since the introduction of two-dimensional echocardiography. *J Am Coll Cardiol* 1985;**5**:1465–73.
- 3 **Rahilly GT**, Nanda NC. Two-dimensional echocardiographic identification of tumor haemorrhages in atrial myxomas. *Am Heart J* 1981;**101**:237–9.
- 4 **Thier W**, Schluter M, Krebber HJ, *et al.* Cyst in left atrial myxomas identified by transesophageal cross-sectional echocardiography. *Am J Cardiol* 1983;**51**:1793–5.
- 5 **Shyu KG**, Chen JJ, Cheng JJ, *et al.* Comparison of transthoracic and transesophageal echocardiography in the diagnosis of intracardiac tumors in adults. *J Clin Ultrasound* 1994;**22**:381–9.